NAVSEA
NAVAL SEA SYSTEMS COMMAND

Brief for DDX Program (18 June 2003)
Miniature/Microminiature (2M)
Module Test & Repair (MTR) Program

GOLD DISK

SIGNATURES

PARTS LIST

DRAWINGS

AN/USM 646

2M

TROUBLESHOOT

REPAIR
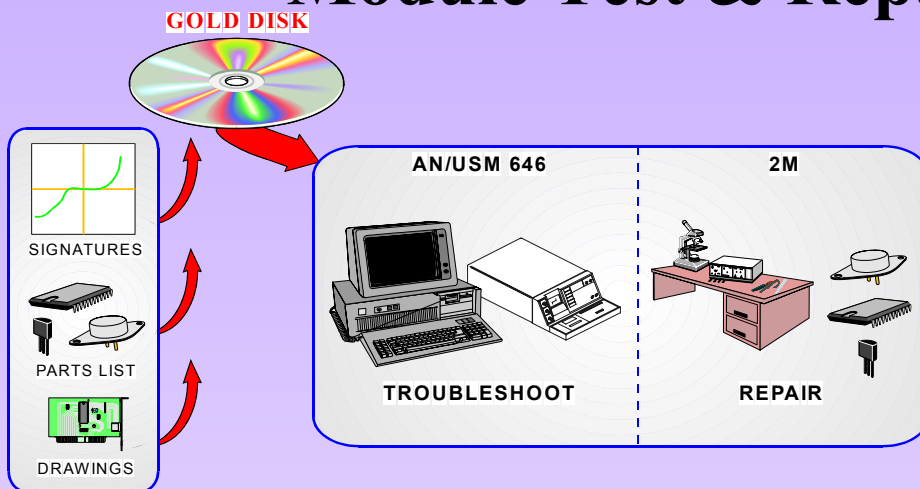
2M MTR PROGRAM HOME PAGES

Http://WWW.CRANE.NAVY.MIL/2M

HTTPS://WWW.NOR.NUWC.NAVY.MIL/MTR

Tom Ingram SEA04RP2
DSN 326-3380
COM 202-781-3380
IngramTW@NAVSEA.NAVY.MIL
Building 197, 4W-1670

SEA 04RP2 Responsibilities

2M MTR Equipment Outfitting

- 294 Ships and Shore Commands
- 18 Submarines (TRIDENTS & 4 SSGN)
- 7 NETC Training Commands
- 10 FTSCs 2M MTR Inspector Sites
- New Equipment Evaluation/Selection
- 2M MTR Equipment & SW ILS
- 2M Piece Part APLs (41 Ship Class & 20 Shore)

New Ship/ System PM, SYSCOM, FMS and other Services/USCG Interface

2M MTR Program Processes

MTR Test Routine Development & Distribution

2M MTR Certification/ Site Review Support

NAVSEA 2M MTR Program Infrastructure

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CNO N43*
2M MTR Resource Sponsor

NAVSEA 04RP2
2M/MTR Program/ILS Manager

**NSWC Crane
Code 6083**

2M Equipment ISEA/TDA
- 2M Certifying Agent
- Piece Part Outfitting (SCN)

**NAVICP-M
Mechanicsburg
Code 058**

- 2M Piece Part Support
- 2M/MTR Equipment Support
- Gold Disk Candidate List Data
- CCA/EM Requisition Data
- BOSS Funds for Gold Disks

**NUWC DET FEO
NORFOLK
Code 201V**

MTR Equipment ISEA/TDA
- Gold Disk Development Mgr
- GD Verification/Distribution
- 2M Piece Part Allowances

**FTSCLANT 4103
FTSCPAC 203
FTSCLANT/PAC DETs**

2M Inspectors/FSE

**Seven 2M/MTR
Training Commands**

GOLD DISK DEVELOPERS
- **SPAWAR/SEA/AIR Field Act.**
- **Navy IMAs and Training Cmds**
- **Naval/USMC Aviation IMAs**
- **USCG (Surface/Aviation)**
- **USMC (Ground)**
- **USAF MAJCOMs**
- **USA**

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Navy 2M MTR
Gold Disk Infrastructure

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HQMC (I&L/P&R)
MARCORPSYSCOM
(TMDE)

CNO (N43)
NAVSEA 04RP2

USMC (GROUND)
Echelon 3 & 4 Cmds

Surface Ships, Subs,
Shore Commands

NUWCDET
FEO NORFOLK
NSWC CRANE

NAVAL AVIATION
AIMDs, MALS & NADEPS

1. Maintain standard 2M MTR
Gold Disk hardware, software and
ILS.

2. Obtain maximum synergy from
shared and unique infrastructure.

CNO (N78)
NAVAIR (AIR 3.6, PMA 260D)

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Training for MTR Test Equipment & 2M Repair

Course

Completion of all courses results in NEC 1591

AN/USM-646 A-100-0076 5 days	Miniature Electronic Repair A-100-0072 26 days NEC 9527	Microminiature Electronic Repair A-100-0073 12 days NEC 9526

Course Location / Instructor (9509) & Inspector (9503)

Course Location	Instructor (9509) & Inspector (9503)	
FTC Norfolk *	FTC Norfolk	FTC Norfolk
FTC Mayport	FTC Mayport	FTC Mayport
FTC San Diego	FTC San Diego *	FTC San Diego *
NAMTRAGRUDET Whidbey Is.	NAMTRAGRUDET Whidbey Is.	NAMTRAGRUDET Whidbey Is.
ATG MIDPAC	ATG MIDPAC (Pearl Harbor)	ATG MIDPAC Pearl Harbor
ATG WESTPAC)	NAMTRAGRUDET Atsugi, Japan	NAMTRAGRUDET Atsugi, Japan
	ATG WESTPAC	ATG WESTPAC

*Course Curriculum Model Manager

Standard 2M Micro Configuration (PRC 2000-SMT)

Microscope, tools, ESD material and consumables not shown.

Portable 2M REPAIR Kit

- Pace MBT-250
- Subset 2M AEL
- < 2 ft^3 storage case
- No microscope *

Pace TF 500 (New Shore IMA 2M BGA/Fine Pitch Rework Station)

MTR Test Equipment Suite

AN/USM-646
TEST STATION
(Huntron 5100DS
& Controller)

916 in use (5/1/02)
460 NAVSEA cog

SHORTRACK 90
SWITCHER 410
HUNTRON 2000

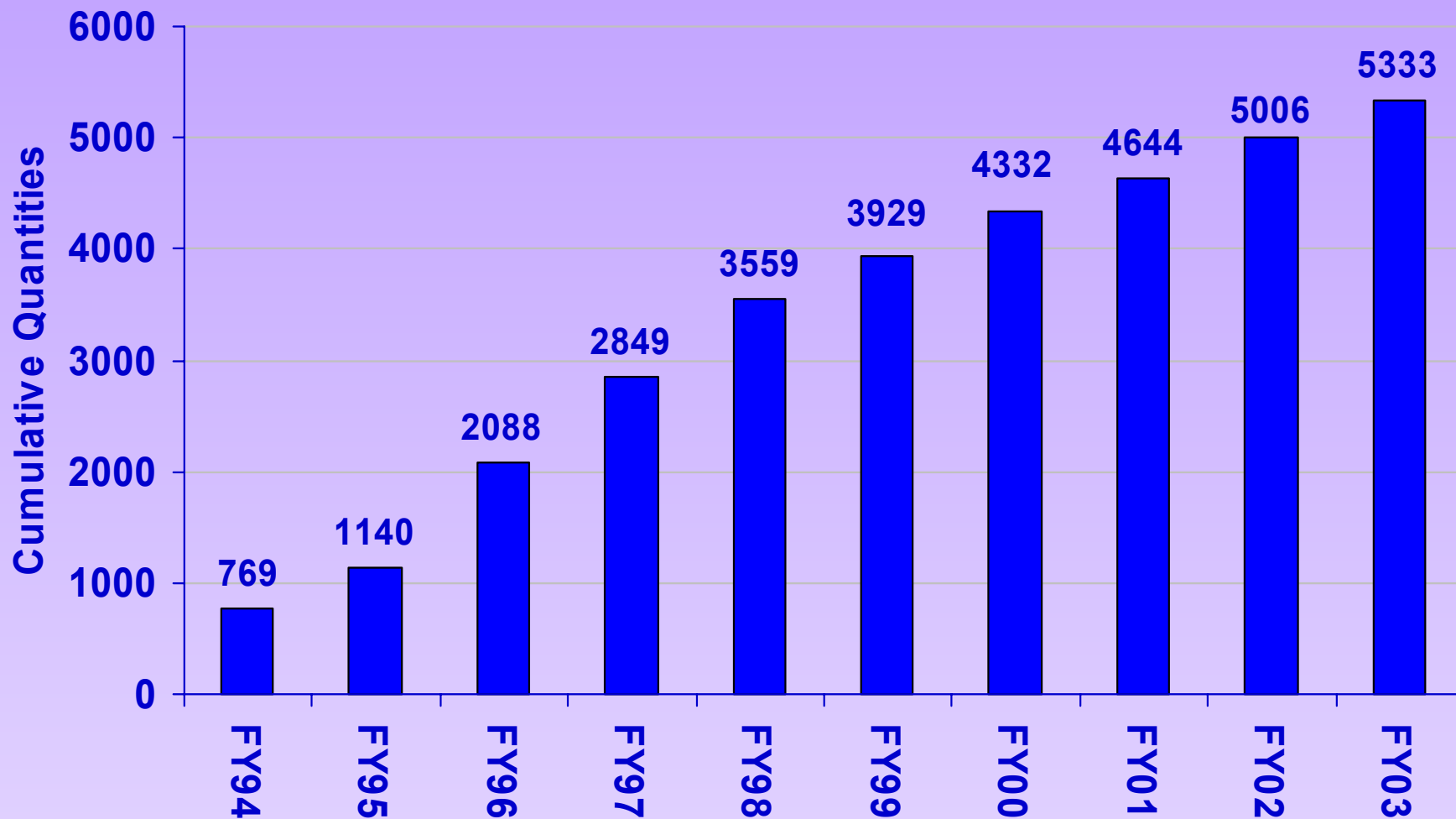# PROTRACK Configuration
AN/USM-674(V)2
317 Protracks deployed (4/30/03)

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Gold Disk Production

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Cumulative Quantities

| FY	Value
FY94	769
FY95	1140
FY96	2088
FY97	2849
FY98	3559
FY99	3929
FY00	4332
FY01	4644
FY02	5006
FY03	5333

FY03 Total as of 7 June 2003

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Benefits of 2M MTR Utilization

From 1 Oct. 1997 to 30 Sept. 2002 Navy commands outfitted by NAVSEA 04RP2 reported **46,246 2M repairs** completed which resulted in **3,962 CASREPS averted/corrected** and **$146.6M in OPTAR cost avoidance. Annual program investment was less than $6M.**

Improves Readiness & Sustainability of systems/equipment
Results in reduced requirements for shipboard and shore spares.
Reduces tech assists from off ship/base tech reps.

Promotes sailor "Quality of Service/Life" .
2M MTR Training used as reenlistment incentive.
Sailors eligible for Monthly CNO Gold Disk Award.

Module Test and Repair Quarterly reporting can provide system PM/ILSM with repair and failure data.
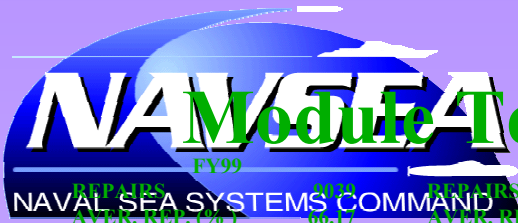
Module Test & Repair Tracking System Data

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	FY99		FY00		FY01		FY02		FY03(2QTR)	
REPAIRS	8038	REPAIRS	9373	REPAIRS	9364	REPAIRS	10,327	REPAIRS	5749	
AVER. REP. (%)	68.17	AVER. REP. (%)	69.36	AVER. REP. (%)	70.8	AVER. REP. (%)	75.25	AVER. REP. (%)	76.2	
CASREPS AVERT/CORR	874	CASREPS AVERT/CORR	673	CASREPS AVERT/CORR	713	CASREPS AVERT/CORR	804	CASREPS AVERT/CORR	530	

OPTAR Cost Avoidance ($M)

Year	Value
FY99	$29.034
FY00	$27.787
FY01	$30.321
FY02	$33.172
FY03(2QTR)	$19.876
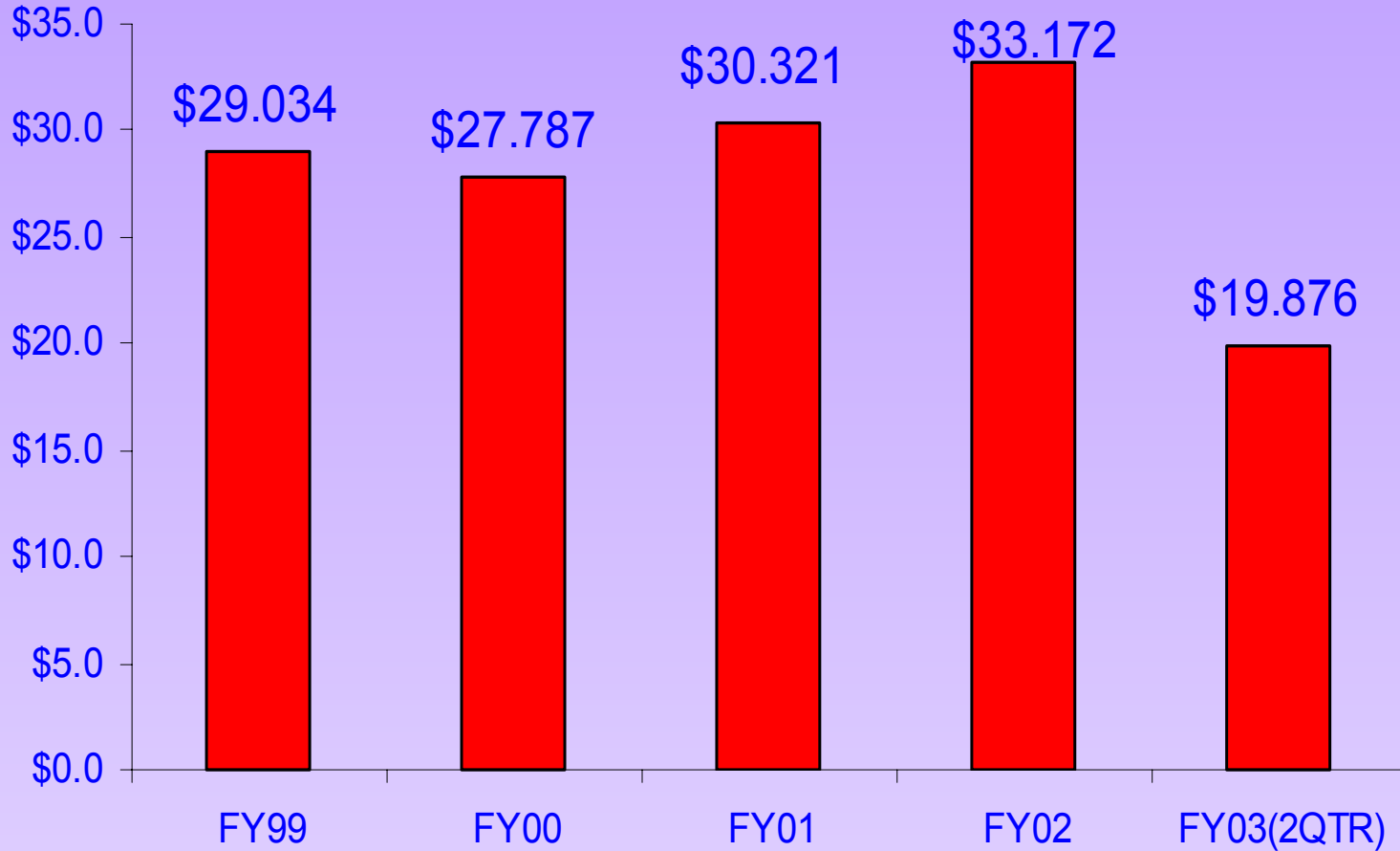
DATA DOES NOT INCLUDE ANY REPAIRS UTILIZING 2M/MTR EQUIPMENT COMPLETED
AT NAVAL AND MARINE AVIATION OR MARINE GROUND MAINTENANCE ACTIVITIES.

Requirements for Successful Utilization of 2M MTR Capabilities

Command Attention and compliance with JFMM (CLF/CPF INST 4790.3), Volume IV, Part I, Chapter 11 including Quarterly MTRTS Reports.

Trained Personnel with NEC 1591 and Current Certification

Work center properly outfitted with 2M MTR HW/SW, tools, accessories and 2M piece parts

Effective coordination between Supply and Maintenance personnel to promote screening and repair attempts when feasible for all failed circuit cards and electronic modules.

Future Plans

Continue PROTRACK and PINPOINT Deployments

PROTRACK Training Transition (Oct 2003)

Continue 2M Repair Equipment Deployments

PRC 2000 Replacements (2006-2010)

Continue MTR Test Routine Development

Continue Piece Part APL Revisions

Expand Piece Part Assist Efforts.

Promote NEC 1591 Requirements

Enhance Selected Shore IMAs 2M MTR Capabilities

Revise/refine policy and procedures documents

Enhance use of MTRTS Data

Institutionalize 2M SCREEN and REPAIR Process

RSUPPLY GOLD DISK POP UP SCREEN

Brief and Assist New Ship/Systems Programs

DDX Class 2M MTR Topics

DOD/SECNAV 5000 Series Instructions: Dynamic, but one constant is R-LCC.

OPNAVINST 4700.7K (Ship Maintenance) : Emphasizes use of 2M MTR capabilities.

CLF/CPF Inst. 4790.3 includes 18 page chapter; Policy/responsibilities for 2M MTR Program.

Early Design/planning efforts for lead ship (Review Prelim. ILSP, SMD, NTSP, SCMP).

ILS Management Team member (as required)…Develop relevant Issue/Point Papers.

Assist with space arrangement drawing and outfitting for 2M MTR Work center.

Assist with system/equipment Maintenance Planning (new GFE and CFE)

Assist with onboard and wholesale CCA/EM spares determination.

Assist with PBL Depot contracts for CCA/EM Repair.

Develop baseline 2M piece part APL

Provide baseline Gold Disk List

Develop Gold Disk Candidate List for new DDX systems

2M MTR Equipment and Piece Part Outfitting….GD Development

Assist with DMS Issues